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Part IV

Department of the Interior

Office of Surface Mining Reclamation and Enforcement

Effluent Limitations and Sedimentation Pond Design Criteria

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

30 CFR 715, 717, 816, and 817

Permanent and Interim Regulatory Programs; Effluent Limitations and Sedimentation Pond Design Criteria

AGENCY: Office of Surface Mining Reclamation and Enforcement (OSM), Interior.

ACTION: Proposed rules.

SUMMARY: The Office of Surface Mining Reclamation and Enforcement (OSM) is proposing that effluent limitations for all coal mining operations shall be in compliance with all applicable Federal and State water quality standards including the effluent limitations guidelines promulgated by the U.S. Environmental Protection Agency (EPA). EPA has recently proposed revised effluent limitations for coal mining operations (46 FR 3136–3159 (Jan. 13, 1981), as amended 46 FR 28873–28881 (May 29, 1981)). These effluent limitations differ from those currently in effect primarily in that, under certain circumstances, they allow compliance with a settleable solids (SS) standard instead of a total suspended solids (TSS) standard during rainfall events and the reclamation phase of mining. In addition, no discharge of waste water pollutants are allowed from new source coal preparation plants.

OSM is also proposing new sedimentation pond design criteria. These new criteria differ from previous criteria in that most design requirements are not specified. Instead, except for safety requirements, the regulatory authorities, operators and the registered professional engineers who design the ponds or a treatment facility must ensure compliance with the effluent limitations. OSM is soliciting comments on each of these proposals.

DATES: The comment period on the proposed rules will extend until 5:00 p.m. September 3, 1981. Comments received after that hour will neither be considered nor included in the administrative record.

PUBLIC MEETINGS: Representatives of OSM will be available to meet between July 2, 1981 and September 3, 1981 at the request of members of the public, state representatives, industry officials, labor representatives, and environmental organizations to receive advice and recommendations concerning the content of the proposed regulations. Public Hearings will be held on July 14, July 16, July 21, July 23, July 28 and July 30, 1981. See Supplementary Information for locations and times of the Hearings.

ADDRESS: Written comments must be mailed or hand delivered to Office of Surface Mining, U.S. Department of the Interior, Room 153, South Interior Building, 1951 Constitution Avenue, N.W., Washington, D.C. 20240.

Persons wishing to meet with representatives of OSM should contact the person listed below under "For Further Information Contact." OSM representatives will be available for such meeting from 9:00 a.m. to noon and 1:00 p.m. to 4:00 p.m., local time, Monday through Friday, excluding holidays, at the Washington, D.C. office. Summaries of each meeting will be prepared and made available for public review in Room 153 of the South Interior Building.

FOR FURTHER INFORMATION CONTACT: Jose R. del Rio, P.E., Civil Engineer, Division of Technical Services, Office of Surface Mining, U.S. Department of the Interior, South Building, 1951 Constitution Avenue, NW., Washington, D.C. 20240; Telephone (202) 343–4022.

SUPPLEMENTARY INFORMATION: Individual testimony at the hearings will be limited to 15 minutes. The hearings will be transcribed. Filing of a written statement at the time of giving oral testimony would be helpful and facilitate the job of the court reporter. Submission of written statements to the person identified under "For Further Information Contact" in advance of the hearing date will assist the OSM officials attending the hearings by giving them an opportunity to consider appropriate questions which could be asked to clarify the statements or elicit more specific information from the persons testifying.

Persons wishing to testify at the regional hearings should contact the appropriate regional office directly. Those wishing to testify at the Washington, D.C. hearing should contact Mr. Jose R. del Rio, at (202) 343–4022.

Person in the audience who have not been scheduled to speak and wish to do so should register at the hearing and will be heard after the scheduled speakers. Persons not scheduled to testify assume the risk of having the hearing adjourned if they are not present when all scheduled speakers conclude.

In Washington, D.C., the hearing will be held from 9:00 a.m. to 12:00 noon and will reconvene at 1:00 p.m., if necessary.

In Indianapolis, IN, the hearing will be held form 9:00 a.m. to 11:00 a.m. and from 2:00 p.m. to 4:30 p.m.

In Charleston, WV, Lexington, KY, Kansas City, MO, and Denver, CO, the hearings will be held from 4:00 p.m. to 7:00 p.m. and from 8:00 p.m. to 10:30 p.m.

The public hearings will be held at the following locations and dates:

(1) July 14, 1981, War Memorial Building, Main Auditorium, 431 N. Meridian Street, Indianapolis, IN 46204, Telephone No.: 317–269–2656

(2) July 16, 1981, Hilton Inn, Keeneland Hall, I–75 and Newtown Pike, Lexington, KY 40505, Regional Office Telephone No.: 615–637–8060

(3) July 21, 1981, Charleston Civic Center, West Virginia Room Charleston, WV 25302, Telephone No.: 304–343–8125

(4) July 23, 1981, Department of the Interior, Main Auditorium, 18th and C Streets, N.W., Washington, D.C. 20240, Telephone No.: 202–343–4022

(5) July 28, 1981, Scarritt Building, 3rd Floor Conference Room 818 Grant Avenue, Kansas City, MO 64106, Telephone No.: 816–374–5109

(6) July 30, 1981, Brooks Tower, 2nd Floor Conference Room. 1020 15th Street, Denver, CO 80202, Telephone No.: 303–837–4072

On December 13, 1977, OSM published interim program regulations which contained both effluent limitations, 30 CFR 715.17(a) and 717.17(a), and sedimentation pond design criteria, 30 CFR 715.17(e) and 717.17(e). 42 F.R. 62639. Revised interim program sedimentation pond design criteria were promulgated February 27, 1978. 43 F.R. 8090. In the case challenging the interim program regulations, the U.S. District Court for the District of Columbia upheld the effluent limitations, but enjoined application of the sedimentation pond design criteria to allow further public comment and judicial review. *In re Surface Mining Regulation Litigation*, 452 F. Supp. 327; 456 F. Supp. 1301 (D. D.C. 1978).

On March 13, 1979, OSM published permanent program regulations, which contained effluent limitations identical to those in the interim program, 30 CFR 816.42 and 817.42, but which contained revised sedimentation pond design criteria, 30 CFR 816.46 and 817.46. 44 F.R. 15312. These same design criteria were proposed for inclusion in the interim program on May 25, 1979. 44 F.R. 30610.

On December 31, 1979, OSM suspended the precipitation event exemption from the effluent limitations and suspended the sedimentation pond design criteria concerning sediment storage volume, detention time, dewatering devices, and sediment removal frequency in both the interim

and permanent programs. 44 F.R. 77447. As announced in that notice, OSM has been granting relief from the effluent limitations based on EPA's precipitation event exemption for the coal mining point source category. 40 CFR 434.22(c), 434.25(c), 434.32[b), 434.35(b), 434.42(b), and 434.45(b). See also 44 F.R. 76788 (Dec. 28, 1979) and 45 F.R. 6913 (Jan. 30, 1980). Also on December 31, 1979, OSM issued a notice of intent to commence rulemaking to establish revised effluent limitations and sedimentation pond design criteria. 44 F.R. 77456.

Two significant court decisions have been issued since. First, on May 2, 1980, the U.S. Court of Appeals for the District of Columbia reversed the ruling in *In re Surface Mining Regulation Litigation*, 456 F. Supp. 1301, 1314 (D. D.C. 1978), that OSM could omit from its effluent limitations certain variances and exemptions contained in EPA's regulations. *In re Surface Mining Regulation Litigation*, 627 F. 2d 1346 (D.C. Cir. 19[illegible]). Second, on May 16, 1980, the U.S. District Court for the District of Columbia ruled that OSM did not have a sufficient record upon which to base its application of the same effluent limitations to actively mined areas and areas under reclamation. *In re Permanent Surface Mining Regulation Litigation*, No. 79–1144.

The regulations proposed today address issues raised in the December 31, 1979, notice of intent to commence rulemaking, in comments received in response to that notice and in the intervening court decisions. Together with revised effluent limitations guidelines and new source performance standards for the coal mining point source category proposed by EPA (46 F.R. 3136 (Jan. 13, 1981), as amended 46 F.R. 28873–28881 (May 29, 1981)), these regulations are the product of a joint OSM/EPA effort. OSM and EPA have reviewed and relied upon the same technical data, including empirical studies of the performance of numerous sedimentation ponds, in arriving at these proposed rules. The technical data supporting these proposals is described in detail in the preamble to the proposed EPA rules.

Dissussion of Proposed Changes

Overview

The proposed revised effluent limitations do not contain the specific numerical standards that must be met by surface coal mining operations; instead, applicable effluent limitations, in particular those promulgated by EPA applicable to surface coal mining operations, shall be complied with. Briefly, the proposed EPA effluent limitations retain the 35/70 mg/1, TSS standard for base flow conditions. During precipitation events and during the reclamation phase of mining, discharges from drainage facilities sized to a 10-year, 24-hour precipitation event standard are subject to effluent limits of 0.5 ml/1 SS and a pH from 6 to 9. Only the pH standard applies during events larger than a 10-year, 24-hour precipitation event. New source preparation plants will not be allowed to discharge pollutants. OSM is also proposing to allow the use of alternate sediment control measures in lieu of sedimentation ponds if those facilities can meet the applicable state and Federal water quality and effluent standards, disturbances to the hydrologic balance are minimized, and use of such a facility is the best technology currently available.

OSM has deleted the requirement that all ponds be designed to contain the runoff from a 10-year, 24-hour precipitation event. Such critical factors as sediment storage volume, detention time and dewatering are left to the best judgment of the regulatory authorities, operators, and the registered professional engineers designing the ponds. Sedimentation ponds must, though, enable compliance with the effluent limitations, water quality standards, and the safety requirements of the state and Federal governments. The safety criteria have been retained.

These changes are being proposed for both the permanent and interim programs. Discussion of the specific proposals follows:

Section 715.17(a)

(1) Section 715.17(a) has been revised to make the interim program rules more understandable and identical with the proposed permanent program rules.

(2) Section (a)(1) requires that all drainage from disturbed areas be passed through a sedimentation pond or a treatment facility. OSM has added treatment facilities as an alternative means of controlling sediment. In some cases, chemical treatment may be the most practical means of meeting the effluent limitations although in other cases it will be more expensive than using sedimentation ponds alone.

Section (a)(1) incorporates a provision requiring that point source discharges from underground mines that do not meet effluent limitations be passed through a sedimentation pond or other treatment facility. This provision was added because discharges from underground mines may deteriorate the quality of surface waters. Use of sedimentation ponds or treatment facilities will prevent such degradation. This provision allows OSM to combine surface and underground coal mining activities in one section.

Flexibility has been given to the regulatory authority to approve the use of alternate sediment control measures, such as barriers, dams, or excavated depressions that slow water runoff and allow sediment to settle out. Such measures may be used only where they will not cause or contribute to a violation of the local water quality standards for the receiving stream, will minimize disturbance to the hydrologic balance, and will represent the best technology current by available.

(3) Section (a)(2) requires that the sediment control facilities be maintained at least until the land has been stabilized and revegetated, as required by Section 515(b)(10)(C) of the Surface Mining Control and Reclamation Act of 1977 (SMCRA). OSM is proposing to delete, however, the requirement that sediment control measures be retained until the untreated drainage from the disturbed area meets the water quality standards for the receiving stream.

The first year after commencement of reclamation yields the largest amounts of sediment. "Sediment Yield from Strip Mined Watershed in Eastern Kentucky," by Willie R. Curtis, Oct. 23–24, 1974, p. 88 states that ". . . sediment accumulation in debris basins below surfaced-mined lands in Eastern Kentucky shows highest sediment yield during the first 6 months after mining. The erosion rate diminishes to fairly low levels within 3 years. . . ." A graph on page 90 of this document shows that by 24 months after mining the sediment yield is very low. OSM believes that in most cases sedimentation will have decreased to relatively low levels by two growing seasons after the last augmented seeding of an area draining into a sedimentation pond, and that it may be most efficient for an operator to remove the sedimentation pond. The operator will continue to be responsible for preventing additional contribution of suspended solids to the receiving stream (see SMCRA Section 515(b)(10)(B)(i)) and ensuring compliance with all applicable State and Federal water quality standards. *See* proposed Section 715.17(a)(3). The operator may, though, substitute appropriate effective alternate sediment control measures for a sedimentation pond after stabilization and revegetation and no sooner than two years after the last augmented seeding.

(4) Section (a)(3) requires that discharges of water from all mining activities be made in compliance with all applicable State and Federal water

quality standards, including the effluent limitations guidelines for coal mining promulgated by EPA.

Section 715.17(e)

(1) No sedimentation pond design criteria have been in effect for the interim program since their enforcement was enjoined in *In re Surface Mining Regulation Litigation*, 452 F. Supp. 327, 343 (D.D.C 1978). The proposed revised sedimentation pond design criteria are identical for both the interim and permanent programs. The proposed revised criteria are discussed below with respect to the current permanent program criteria.

(2) The sedimentation pond design criteria have been rearranged and revised. The numerical specificity of the sedimentation pond design criteria, except for the safety standards, has been reduced. OSM believes that regulatory authorities and registered professional engineers are knowledgeable enough to design and approve sedimentation ponds that utilize the best technology economically achievable and currently available and that meet all applicable performance standards. OSM Intends in the future to publish technical memoranda on design of sedimentation ponds that will provide more detailed design criteria.

(3) The general requirements under section (1) are identical to those currently in the permanent program. They require that sedimentation ponds be built before any disturbance to the area to be drained into the pond, be located as near as possible to the disturbed area, and be located out of perennial streams unless the regulatory authority approves such location. The preamble to the existing rules fully explains this. See 44 FR 15159.

(4) Section (1)(iii) sets the minimum design criteria that the structure must meet.

(a) Proposed Section (A) requires that a sediment storage volume be provided that is adequate to contain the sediment that will accumulate in the pond between scheduled removals of sediment. The sediment storage volume must allow the sedimentation pond to comply with the effluent limitations imposed by EPA under 40 CFR 434. The storage volume also should be sufficient to avoid excessively frequent and costly sediment removal.

The sediment storage volume must also be distinct from the volume provided for the design event. Within these constraints, the determination of actual sediment storage volume is left to regulatory authority and registered professional engineers.

(b) Section (B) requires that the sedimentation pond be designed to provide sufficient detention time of the inflow from the design event to allow the structure to meet the applicable effluent limitations, including those imposed under 40 CFR 434. Detention time is critical to the functioning of the sedimentation ponds for it allows sediment particles to settle out. If the appropriate detention time is not given, the sedimentation pond will not meet the EPA's effluent requirements because the detention time determines the amount of TSS particles that will settle out.

OSM believes that allowing credits for permanent pool storage in calculating detention time is a sound engineering practice. One possible method for giving credit for permanent pool storage in calculating theoretical detention time is the equation developed by Ward *et al.* in *Sizing Surface Mine Sediment Control Reservoirs for Theoretical Detention Time* (1979d) p. 77. OSM specifically solicits comments on this subject, including comments on the Ward equation and proposals for alternate methods of calculating detention time while giving credit for permanent pool storage volume. OSM is also considering, and solicits comments on, allowing detention time credits for onsite sediment control practices such as terracing, gabions, straw bales, etc., used as supplements to sedimentation ponds.

(c) Proposed Section (C) requires that sedimentation ponds be designed to contain or treat a design precipitation event that is based on site specific conditions. No specific event, such as the 10-year, 24-hour event, is specified in this rule. This is consistent with EPA's proposed rule which provides for variances from its 10-year, 24-hour requirement on a case by case basis (46 FR 3148–3149, Sections XII and XIII). OSM's provision should benefit operations in steep slope areas where construction of sedimentation pond designed to contain a 10-year, 24-hour precipitation event is not feasible due to limited availability of suitable sites. OSM expects, however, that in such areas sedimentation ponds will be no smaller than land constraints require.

Regardless of size, all sedimentation ponds must enable compliance with applicable water quality criteria and EPA's proposed effluent limitations.

(d) Section (D) requires that a non-clogging dewatering device be provided that is able to achieve the design detention time and thereby allow the sedimentation pond to meet the effluent limitations. A non-clogging dewatering device is needed to avoid unnecessary use of the emergency spillway or overtopping of the embankment, either of which can create hazardous conditions downstream by allowing the flooding of the receiving stream or by structually weakening, eroding or breaching the embankment of the sedimentation pond.

(e) Section (E) requires that the sedimentation pond be designed and constructed to avoid short-circuiting. This requirement is continued from the current permanent program regulations. 30 CFR 816/817.46(e). The preamble to these sections fully explains the rationale.

(f) Section (F) requires that sediment be removed on a periodic basis. One of the main reasons sedimentation ponds overtop, breach or fail to meet the effluent requirements is lack of maintenance. Furthermore, the "timely removal and disposal of accumulated sediment, cleaning of clogged outflow pipes, repair of emergency spillways and embankment repair *are extremely important for the proper functioning of the whole sedimentation pond system, but are usually overlooked.*" Effectiveness of Surface Mine Sedimentation Ponds, by Kathuria, Nawrocki and Becker, EPA–600/2–76–117, August 1976. Requiring periodic sediment removal ensures that the structures will be maintained in a safe manner and that the effluent limitations will be met.

(g) Section (G) requires that sedimentation ponds be designed and constructed with the following safety factors:

(1) A combination of principal and emergency spillways that will safely pass a 25-year, 24-hour precipitation event. This provision is retained from Sections 816/817.46(i) of the permanent program regulations. The preambles to Sections 816/817.46(i) fully explains the rationale.

(2) Provision of an adequate freeboard at all times. The purpose of the freeboard is to protect the embankment against overtopping being caused by wave action. The freeboard requirement is retained from Sections 816/817.46(j) of the permanent program regulations, although the proposed regulations specify no particular freeboard height. The preambles to those sections fully explain the rationale.

The following publications may be used as guidelines in designing the sedimentation pond safety features:

(1) Design Guidelines for Coal Refuse Piles and Water, Sediment or Slurry Impoundments and Impounding Structures, U.S. Department of Labor,

MSHA, Informational Report IR1109, 1979;

(2) Earth Dams and Reservoirs, Technical Release No. 60, U.S. Department of Agriculture Soil Conservation Service, June 1976;

(3) Pond (No.), U.S. Department of Agriculture Soil Conservation Service, October 1977. Pond 378, pages 1 through 8; and

(4) Design of Small Dams, U.S. Department of the Interior, Bureau of Reclamation, 1977.

(h) Section (H) requires that all embankments and surrounding disturbed areas be stabilized and revegetated, as required by Sections 816/817.46(s) of the permanent program regulations. The covering of exposed surfaces is done to avoid further erosion and contribution of suspended solids to the stream by wind or wave action. Technical support for this requirement can be found in *SCS Pond (No.)* at 378–7 (1977), *Soil and Water Conservation Engineering,* by Schwab, Frevert, Edminister and Barnes, second edition, 1966 at 314–315, and in *Erosion and Sediment Control,* Vol. 2 at 71 (1976). These references conclude that protective vegetative cover should be established on all exposed surfaces if climatic conditions allow it. Otherwise, non-vegetative cover such as mulches and gravel may be used.

(5) Section (2) requires adherence to normal design and construction procedures, such as ensuring against excessive settlement, clearing foundations of organic material, providing proper embankment static safety factors, and providing proper compaction. This section includes requirements from existing Sections 816/817.46(k), (n), (o), (p) and (q)(2) of the permanent program regulations. However, the requirement that the entire embankment foundation be scarified and the requirements of Sections 816/817.46(p) have been deleted because they are normal construction practices.

(6) Section (3) requires that a registered professional engineer design and certify the construction of the sedimentation pond or treatment facility. It also requires that the structure be inspected during construction by the registered professional engineer or someone under his direct supervision. The registered professional engineer is responsible for ensuring that the structure or treatment facility is designed according to the applicable requirements, is built in accordance with the design plans and specifications and for approving any change orders (change orders are any deviations from the plans and specifications). This section complies with SMCRA Section 515(b)(10)(B)(ii).

(7) Section (4) requires that sedimentation ponds having an impoundment capacity of 20 acre-feet or more or having an embankment 20 feet high or more shall comply with MSHA criteria published at 30 CFR 77.216 and shall have emergency spillways designed to safely pass a 100-year, 24-hour precipitation event. These requirements are retained from Sections 816/817.46(q)(1) of the permanent program regulations. The preambles to these sections fully explain the rationale. See 44 FR 15166.

(8) Section (5) is a rewording of Sections 816/817.46(t) of the permanent program regulations. The requirement of four inspections per year has been deleted because 30 CFR 77.216 only requires that structures be inspected once each year. 30 CFR 77.216 requires that structures be examined by a qualified person at intervals not exceeding seven days for appearances of structural weaknesses or hazardous conditions. OSM believes that this is sufficient. The regulatory authority has the flexibility, though, to require more inspections.

Sections 717.17(a) and 717.17(e)

The existing interim program effluent limitations and sedimentation pond design criteria are almost identical for surface mining (30 CFR 715.17(a) and 715.17(e)) and underground mining (30 CFR 717.17(a) and 717.17(e)). Because the proposed requirements are identical for both surface and underground mining, OSM is proposing to reduce sections 717.17(a) and 717.17(e) to require that the appropriate surface mining requirements be followed by underground operations. OSM especially solicits comments on the issue of whether or not separate and distinct requirements should be promulgated for underground mining.

Sections 816.42, 816.46, 817.42 and 817.46

As proposed, these provisions are identical to Sections 715.17(a), 715.17(e), 717.17(a) and 717.17(e), respectively. Their bases are explained in the preambles to the latter sections.

Response to Comments

In its December 31, 1979, notice of intent to commence rulemaking to establish revised effluent limitations and sedimentation pond design criteria (44 FR 77456), OSM solicited public comments on the alternatives outlined in the notice. Numerous comments were received in response to that notice. All comments received have been reviewed and considered in the development of the rules proposed in this notice. Specific responses to each comment, including comments that have already been received, will be published at the time OSM promulgates final revised effluent limitations and sedimentation pond design criteria.

Alternatives

OSM is considering the following alternatives in addition to the rules proposed in this notice.

1. Adopt a modified rainfall exemption under Sections 715.17(a), 717.17(a), 816.42, and 817.42, that either lowers or increases the rainfall frequency level required for award of an exemption. Readopt Sections 816.46 and 817.46 as they existed before the December 31, 1979, suspension and promulgate sections 715.17(e) and 717.17(e) as proposed on May 25, 1979. 44 FR 30610. This alternative presents the problem of determining what rainfall frequency should be adopted to meet both the effluent limitations and the minimum design criteria for sedimentation ponds. *Evaluation of Performance Capability of Surface Mine Sediment Basins,* EPA Contract No. 68–03–2677 by Skelly and Loy, August 3, 1979, at p. 4 and *Letter Report, Task 8, Evaluation of Sedimentation Pond Design Relative to Capacity of Effluent Discharges,* OSM Project No. 78–334–1) by D'Appolonia, August 2, 1979 at 9 showed that sedimentation ponds designed according to OSM criteria may not meet the effluent standards during *any* rainfall event. If this alternative were selected, an exemption from the effluent limitations might have to be given for all precipitation events.

2. Adopt a modified rainfall exemption that reflects the conclusions reached by Skelly and Loy at page 4. Modify the sedimentation pond size and trapping efficiency criteria consistent with the Skelly and Loy conclusions. This alternative is similar to alternative 2, but differs in its modification of the design criteria.

3. Modify the effluent limitations to exempt any discharge from meeting the TSS effluent limitations during certain precipitation events if the facilities is designed, constructed, and maintained according to OSM criteria. The pond size design criteria would be modified only for steep-slope mining.

The design criteria for steep-slope mining would be revised to take into account situations where a suitable site is not available or where construction of a sedimentation pond would pose a safety hazard.

4. Reinstate the effluent limitations as they existed before the December 31,

1979 suspension but delete the pond size and efficiency design criteria.

Commenters may address these alternatives as well as others that they may wish to propose. The following factors, at a minimum, will be considered by OSM with respect to sedimentation pond or a treatment facility design criteria:

1. Detention time calculations.
2. Sediment yield, especially during rainfall, and associated environmental harm.
3. Pond design criteria to avoid short circuiting.
4. Type and design of dewatering devices.
5. Advantages and disadvantages of a wet versus a dry pond.
6. Regional and/or topographic constraints and differences.
7. Deletion of safety criteria from the regulations.

After considering comments submitted and review of other pertinent data, OSM intends to publish final revised effluent limitations and sedimentation pond design criteria in the **Federal Register** about October 15, 1981.

Environmental Impact

The proposed permanent program rules would be more lenient than the permanent program regulations promulgated on March 13, 1979. The interim program rules are exempt from the NEPA process and are not discussed here. 30 U.S.C. 1251(a). This revision is proposed first, because *Letter Report, Task 8, Evaluation of Sedimentation Pond Design Relative to Capacity and Effluent Discharge,* OSM Project No. 78–334–D by D'Appolonia, August 2, 1979, and *Evaluation of Performance Capability of Surface Mine Sediment Basins,* EPA Contract No. 68–03–2677, Skelly and Loy August 3, 1979, demonstrated that sedimentation ponds designed and constructed according to OSM criteria might not be able to comply with the effluent limitations. Second, court decisions have required OSM regulations to conform with those of EPA and have required OSM to justify better its imposition of effluent limitations on the reclamation phase of mining.

OSM published in January 1979 a *Final Environmental Statement* (OSM–EIS–1) on the permanent program rules. This document discusses in detail the beneficial and the adverse effects of the regulations. One of the subjects addresed in OSM–EIS–1 is Water Quality and Sedimentation Control.

The document finds that "sediment is a major obstacle to aquatic species colonization of the streams, lakes and reservoirs regardless of location." Sediment harms aquatic species primarily because sediment suspended in water decreases light penetration, and clogs fish gills causing suffocation. Heavy sedimentation caused by precipitation may destroy fish spawn and micro-invertebrates and damage fish productivity and supplies of fish food.

The document also analyzes the contribution of sediment to streams by surface mining activities. It summarizes that, although in certain areas the amount of land disturbed by surface mining of coal is small, sediment contributed to a headwater stream by a mining operation can be as high as 90% of the total sediment load in the stream. Construction of sedimentation ponds may temporarily increase the amount of land disturbed, and thereby increase sedimentation to the stream. Sedimentation ponds also help detain flood water runoff and provide a source of water for wildlife, unless the water is contaminated by toxic substances.

The proposed rules are less stringent than the existing rules. OSM believes, however, that the proposed rules are within the scope of the analysis of OSM–EIS–1 and feels that OSM–EIS–1 is applicable to the proposed rules. OSM believes, therefore, that a new EIS is not needed. A Draft Environmental Assessment has been prepared and can be examined at Room 153, South Interior Building, 1951 Constitution Avenue, NW., Washington, D.C. 20240 and at any of the five OSM regional offices. For further information please refer to the following sections of OSM–EIS–1.

(1) Part A:
(a) Section III, pp. 1–4, 6–7, and 10–11.
(b) Section IV, pp. 1–2.
(c) Section V, p. 1.
(2) Part B:
(a) Section I, pp. 4–5.
(b) Section III, pp. 16, 21, 27, 29–30, 31, 40, 48, 51–53, 76 and 81.

Regulatory Analysis

OSM published on March 13, 1979, a document entitled "Permanent Regulatory Program of Surface Mining Control and Reclamation Act of 1977, Final Regulatory Analysis, OSM–RA–1." This document complies with Executive Order 12044. It summarizes the economic impact of OSM's regulations on the coal mining industry. It does not attempt to analyze the economic consequences of the entire regulatory program. Pages 82–87 of this document analyze the economic consequences of the alternatives considered for sedimentation pond criteria.

OSM–RA–1 also gives a production weighted average national cost of coal in terms of additional cents per ton of coal produced. Since the proposed regulations differ somewhat from those previously promulgated, OSM has performed a *Sedimentation Pond Economic Analysis* that analyzes the impact of the proposed rules. This document shows that the cost per ton of coal produced is substantially less than that shown in OSM–RA–1. The new analysis is available for inspection at the regional offices of OSM and at the Administrative Record, Room 153, South Interior Building, 1951 Constitution Avenue, N.W., Washington, D.C. 20240. Telephone (202) 343–4587.

Determinations Under Executive Order 12291, The Regulatory Flexibility Act and The National Environmental Policy Act

OSM has examined these proposed rules according to the criteria of Executive Order 12291 (February 17, 1981). OSM has determined that these are not major rules because they will impose only minor costs on the coal industry and coal consumers and because these costs will be as little as one half of the costs associated with the current and suspended regulations. In addition, the proposed regulations emphasize the use of the performance standards instead of design criteria, which will allow operators to utilize the most cost-effective means of achieving the performance standards.

OSM has also determined, pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, that these rules will not have a significant economic impact on a substantial number of small entities. The proposed regulations will allow small coal operators increased flexibility in meeting performance standards and should especially ease the regulatory burden on small coal operators in Appalachia.

As stated above, OSM has prepared a draft environmental assessment that indicates that promulgation of these rules will not constitute a major Federal action having a significant impact on the quality of the human environment. Accordingly, OSM does not intend to prepare a detailed statement on these rules pursuant to Section 102 (2)(C) of the National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2)(C).

Availability of Copies

Copies of the proposed regulations and of 30 CFR Chapter VII, Subchapter K, are available for inspection and may be obtained at the following offices:

OSM Headquarters, Department of the Interior, South Building, Room 153, 1951 Constitution Avenue, N.W.,

Washington, D.C. 20240; (202) 343–4728.

OSM Region I, First Floor, Thomas Hill Building, 950 Kanawha Blvd., East, Charleston, West Virginia 25301; (303) 342–8125.

OSM Region II, 530 Gay Street, S.W., Suite 500, Knoxville, Tennessee 37902; (615) 637–8060

OSM Region III, Federal Building and U.S. Courthouse, 46 East Ohio Street, Indianapolis, Indiana 46204 (317) 269–2609

OSM Region IV, 818 Grant Avenue, Scarritt Building, 5th Floor, Kansas City, Missouri 64106; (816) 758–2193

OSM Region V, Brooks Tower, 1020 15th Street, Denver, Colorado 80202; (303) 837–5511

Copies of materials in the administrative record (except comments submitted to EPA) are available at OSM's Headquarters office. Comments submitted to EPA are available at EPA's office at 401 M Street, SW, Washington, D.C. 20460; (202) 426–2726.

Dated: June 12, 1981.

William P. Pendley,

Deputy Assistant Secretary, Energy and Materials.

1. Section 715.17 is amended by revising paragraphs (a) and (e) to read as follows:

§ 715.17 Protection of hydrologic system.

* * * * *

(a) Hydrologic balance: Water quality standards and effluent limitations.

(1) All surface drainage from the disturbed area shall be passed through a sedimentation pond, a series of sedimentation ponds, or a treatment facility before leaving the permit area. Any point source discharge of water from undergound workings to surface waters which does not meet the effluent limitations of this section shall be passed through a sedimentation pond, a series of sedimentation ponds, or a water treatment facility before leaving the permit area. Alternate sediment control measures may be utilized if:

(i) the alternate sediment control measures will not cause or contribute to a violation of the applicable Federal and state water quality standards;

(ii) disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas will be minimized; and

(iii) the measures represent the use of the best technology currently available.

(2) Sedimentation ponds, other treatment facilities or alternate control measures shall be maintained until the disturbed area has been stabilized and revegetated successfully and no sooner than two years after the last augmented seeding. In all instances, additional contributions of suspended solids to streamflow by runoff from the disturbed area shall be prevented to the extent possible using the best technology currently available.

(3) Discharges of water from areas disturbed by mining activities shall be made in compliance with all applicable Federal and state water quality standards including the effluent limitations guidelines for coal mining promulgated by the U.S. Environmental Protection Agency, 40 CFR 434.

* * * * *

(e) Hydrologic balance: Sedimentation ponds. (1) Sedimentation ponds shall be used individually or in series and shall—

(i) Be constructed before beginning any surface mining activities;

(ii) Be located as near as possible to the disturbed area and out of perennial streams unless approved by the regulatory authority; and

(iii) Be approved by the regulatory authority and designed, constructed and maintained to:

(A) Provide adequate sediment storage volume to account for accumulated sediment;

(B) Provide adequate detention time to allow the effluent from the ponds to meet the applicable state and Federal water quality standards and effluent limitations;

(C) Contain or treat a precipitation event ("design event") to be based on regional diversity, terrain, climate, and other site specific conditions;

(D) Provide non-clogging dewatering devices adequate to maintain the detention time provided under paragraph (B) of this section;

(E) Avoid short circuiting;

(F) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;

(G) Provide the following minimum safety factors:

(*1*) A combination of principal and emergency spillways that will safely discharge a 25-year, 24-hour precipitation event; and

(*2*) Adequate freeboard; and

(H) Provide proper stabilization and revegetation of the embankment and surrounding areas.

(2) The sedimentation pond shall be designed and constructed to ensure against excessive settlement; to avoid organic matter in the embankment foundation; to be free of sod, large roots, frozen soil and acid or toxic forming coal processing waste; to be compacted properly; and to have an acceptable static safety factor.

(3) Each pond shall be designed by, inspected during construction by or under the supervision of, and certified after construction by a registered professional engineer as meeting all applicable performance standards.

(4) A sediment pond with an embankment that is more than 20 feet in height or having a storage volume of 20 acre-feet or more shall also meet the criteria of the MSHA as published in 30 CFR 77.216 and have principal and emergency spillways that in combination will safely pass a 100-year, 24-hour precipitation event.

(5) All ponds, including those not meeting the size or other criteria of 30 CFR 77.216, shall be inspected on a schedule approved by the regulatory authority or in accordance with 30 CFR 77.216–3 for structural weakness, erosion and other hazardous conditions.

* * * * *

2. Section 717.17 is amended by revising paragraphs (a) and (e) to read as follows:

§ 717.17 Protection of the hydrologic system.

* * * * *

(a) Protection of hydrologic system: Water quality standards and effluent limitations

* * * * *

(a) Underground workings shall comply with the requirements of Section 715.17(a) of this chapter.

* * * * *

(e) Protection of hydrologic system: Sedimentation Ponds. Sedimentation ponds associated with underground workings shall comply with all the requirements of Section 715.17(e).

* * * * *

3. Section 816.42 revised to read as follows:

§ 816.42 Hydrologic balance: Water quality standards and effluent limitations.

(a)(1) All surface drainage from the disturbed area shall be pased through a sedimentation pond, a series of sedimentation ponds or a treatment facility before leaving the permit area. Any point source discharge of water from underground workings to surface waters which does not meet the effluent limitations of this section shall be passed through a sedimentation pond, a series of sedimentation ponds, or a water treatment facility before leaving the permit area. Alternate sediment control measures may be utilized if:

(i) the alternate sediment control measures will not cause or contribute to a violation of the applicable Federal and state water quality standards;

(ii) disturbances to the prevailing hydrologic balance at the mine site and

in associated offsite areas will be minimized; and

(iii) the measures represent the use of the best technology currently available.

(2) Sedimentation ponds, other treatment facilities, or alternate control measures shall be maintained until the disturbed area has been stabilized and revegetated successfully and no sooner than two years after the last augmented seeding. In all instances, additional contributions of suspended solids to streamflow by runoff from the disturbed area shall be prevented to the extent possible using the best technology current available.

(3) Discharges of water from areas disturbed by mining activities shall be made in compliance with all applicable Federal and state water quality standards including the effluent limitation guidelines for coal mining promulgated by the U.S. Environmental Protection Agency, 40 CFR Part 434.

4. Section 816.46 is revised in its entirety to read as follows:

§ 816.46 Hydrologic balance: Sedimentation ponds.

(a) Sedimentation ponds shall be used individually or in series and shall—

(1) Be constructed before beginning any surface mining activities;

(2) Be located as near as possible to the disturbed area and out of perennial streams unless approved by the regulatory authority; and

(3) Be approved by the regulatory authority and constructed and maintained to:

(i) Provide adequate sediment storage volume to account for accumulated sediment;

(ii) Provide adequate detention time to allow the effluent from the ponds to meet the applicable state and Federal water quality standards;

(iii) Contain or treat a precipitation event ("design event") to be based on regional diversity, terrain, climate, and other site specific conditions and effluent limitations;

(iv) Provide non-clogging dewatering devices adequate to maintain the detention time provided under paragraph (ii) of this section;

(v) Avoid short circuiting;

(vi) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;

(vii) Provide the following minimum safety factors:

(A) A combination of principal and emergency spillways that will safely discharge a 25-year, 24-hour precipitation event;

(B) Adequate freeboard.

(viii) Provide proper stabilization and revegetation of the embankment and surrounding areas.

(b) The sedimentation pond shall be designed and constructed to ensure against excessive settlement; to avoid organic matter in the embankment foundation; to be free of sod, large roots, frozen soil and acid or toxic forming coal-processing waste; to be compacted properly; to have an acceptable static safety factor.

(c) Each pond shall be designed by, inspected during construction by or under the supervision of, and certified after construction by a registered professional engineer as meeting all applicable performance standards.

(d) A sediment pond with an embankment that is more than 20 feet in height or has a storage volume of 20 acre-feet or more shall also meet the criteria of MSHA as published in 30 CFR 77.216 and have principal and emergency spillways that in combination will safely pass a 100-year, 24-hour precipitation event.

(e) All ponds, including those not meeting the size or other criteria of 30 CFR 77.216, shall be inspected on a schedule approved by the regulatory authority or in accordance with 30 CFR 77.216–3 for structural weakness, erosion, and other hazardous conditions.

5. Section 817.42 is revised including the caption to read as follows:

§ 817.42 Protection of hydrologic system: Water quality standards and effluent limitations.

Underground workings shall comply with the requirements of Section 816.42(a).

6. Section 817.46 is revised to read as follows:

§ 817.46 Protection of hydrologic system: Sedimentation ponds.

Sedimentation ponds associated with underground workings shall comply with all the requirements of Section 816.46.

(Secs. 102, 210(c), 501(b), 503 (a) and (b), 515(b)(10), 515(b)(2) and 516)

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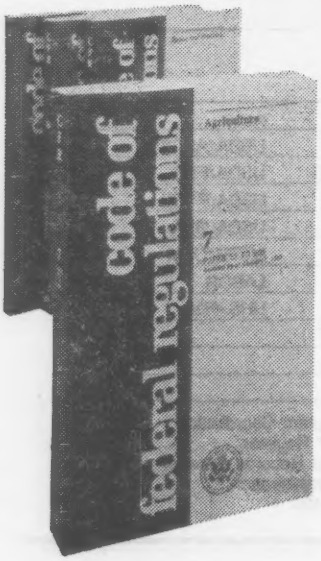

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